

Remarks

Receipt is acknowledged of the Office Action mailed September 21, 2004. Claims 1 and 2 were pending in the application. Claims 1 and 2 have been amended. No new matter has been introduced. Thus, claims 1 and 2 are pending for reconsideration at this time.

Applicant thanks the Examiner for acknowledging receipt of the priority documentation in the pending application.

Claim Objections

Claim 1 stands objected to as requiring an "a" before "connection layer" in line 3 to correct a grammatical error. Claim 1 has been amended accordingly. Withdrawal of the objection to claim 1 is solicited.

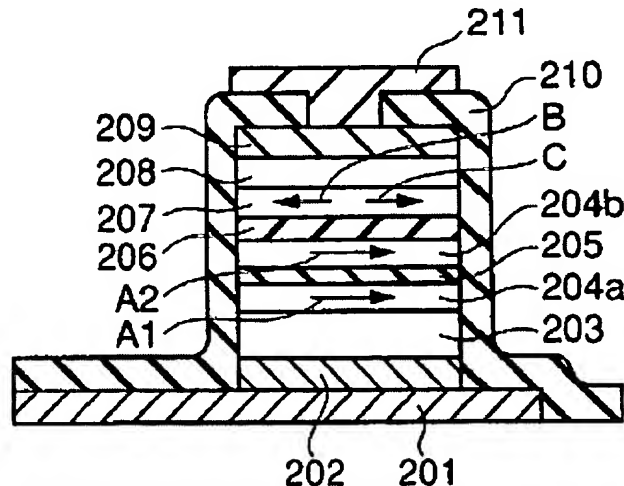
Claim 2 has also been amended to replace "form" with "from" to correct a typographical error.

No new matter has been introduced in claims 1 and 2.

Rejections Under 35 U.S.C. §102(b)

Claims 1 and 2 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Published Patent Application No. 2002/004396 to Amano ("Amano" hereafter). Applicant respectfully traverses this rejection for at least the following reasons.

Amano discloses a tunnel magnetoresistance (TMR) effect device for a portable personal device (see [0001]). As shown in Figure 3C, the TMR device in Amano includes a buffer layer 202, a first and a second magnetization fixed layer 204a and 204b, an insulation material layer 205, a tunnel barrier layer 206, a magnetization free layer 207, a soft magnetic layer 208, and a protective layer 209 (see [0062]). The Office Action infers on page 2 that the insulating material layer 205 in Amano corresponds to the amorphous layer as recited in claim 1, because paragraph [0111] of Amano discloses the use of an amorphous magnetic material for insulator material layer 205 (see also [0108]). Figure 3C of Amano is reproduced below for the Examiner's convenience.



As shown above, the insulating material layer 205 in Amano is formed between the first magnetization fixed layer 204a and the second magnetization fixed layer 204b. Hence, the second magnetization fixed layer 204b separates the tunnel barrier layer 206 from the insulating material layer 205. Thus, in Amano the tunnel barrier layer 206 is not formed *on the insulating layer 205* as claimed.

Moreover, Amano discloses two magnetic fixed layers 204a and 204b and an insulating layer 205 formed therebetween, with a series of corresponding fabrication steps. In contrast, the presently claimed invention only recites one step of forming a single pinned magnetic layer. As the fabrication process and corresponding structure disclosed by Amano differs from that claimed, Amano fails to anticipate the presently claimed invention.

The Office Action further asserts on page 2 that Amano discloses "physically impacting surface of the pinned magnetic layer with an atom to form an amorphous layer thereon (see [0111])." Applicant respectfully disagrees. Paragraph [0111] of Amano is reproduced below for the Examiner's convenience.

[0111] Any amorphous magnetic material known in the art may be used as the amorphous magnetic material above. As the amorphous magnetic material, usable are, for instance, $(\text{CoFe})_{100-x}\text{Y}_x$ or $(\text{CoFeNi})_{100-x}\text{Y}_x$, where, Y represents at least one element selected from the group consisting of B, Si, Zr, P, Mo, Al, and Nb.

Nothing in paragraph [0111] discloses or suggests the *method for forming* the insulating layer 205 with an amorphous magnetic material. As such, Amano fails to disclose or suggest *physically impacting a surface of the pinned magnetic layer with an atom to form an amorphous*

layer thereon as presently claimed. Thus, Amano fails to anticipate the presently claimed invention for this additional reason.

Withdrawal of the rejections under 35 U.S.C. §102(b) over Amano is solicited.

CONCLUSION

In view of the above amendment and remarks, Applicant respectfully requests that all objections and rejections be withdrawn and that a notice of allowance be forthcoming. The Examiner is invited to contact the undersigned for any reason related to the advancement of this case.

Respectfully submitted,

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Heller Ehrman White & McAuliffe LLP
1666 K Street, N.W., Suite 300
Washington, D.C. 20006-4004
Telephone: (202) 912-2000
Facsimile: (202) 912-2020



Daniel L. Girdwood
Attorney for Applicant
Reg. No.: 52,947

Customer No. 26633